

SECRET

Approved For Release 2002/06/17 : CIA-RDP78B04747A000700010004-0

R & D CATALOG FORM

DATE

29 October 1965

1. PROJECT TITLE/CODE NAME

Gems Development
(Continuation)

2. SHORT PROJECT DESCRIPTION

To further develop a system which will permit an objective and meaningful assessment of the quality of operational reconnaissance photography.

3. CLASS OF CONTRACTOR

Manufacturer

4. TYPE OF CONTRACT

CPFF

7. FUNDS

FY 1966

8. REQUISITION NO.

5500-8544-66

9. BUDGET PROJECT NO.

NP-IA-7

FY 1967 \$

10. EFFECTIVE CONTRACT DATE
(Begin - end)

December 1965 - June 1967

11. SECURITY CLASS.

A.A. - Confidential
T. - Unclassified
W. - Unclassified

FY 1968 \$ None

12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION

DDI/NPIC/P&DS/

13. REQUIREMENT/AUTHORITY

There is a requirement for an improved technique to objectively evaluate the image quality of the photography produced by each reconnaissance mission.

14. TYPE OF WORK TO BE DONE

Applied Research

15. CATEGORIES OF EFFORT

MAJOR CATEGORY

Image Quality Analysis

SUB-CATEGORIES

16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC.

1. Technical Reports on: (a) Psychometrical tests; (b) Refinement of existing Gems Technique; (c) Gems set specifications; (d) Alternate Gems Technique; (e) Design and specifications for Gems Viewer with a cost estimate; and (f) A comprehensive project summary report. (Contd)

17. SUPPORTING OR RELATED CONTRACTS (Agency & Other)/COORDINATION

"GEMS INVESTIGATION"; Interservice Image Quality Evaluation Committee; Photo working panel recommendations.

18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (Continue on additional page if required)

Image quality evaluation is required for every mission. However, to date, the development of an objective standard of judging image quality has not been totally successful. This project is an attempt to develop a workable standard by permitting comparison of the photography to a matrix of GEMS (Graded Estimated Measuring Samples). These GEMS are a series of simulated photographs each with carefully controlled image quality parameters. The probable variables to be

(Contd)

19. APPROVED BY AND DATE

OFFICE

DEPUTY DIRECTOR

DDCI

Declass Review by NIMA/DOD

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FORM 11-64 2338

SECRET

GROUP 1
Excluded from automatic
downgrading and
declassification

(1-13)

SECRET

CONTINUED...

16.

2. A Gems Matrix (1000-1500 Gems) with appropriate documentation.

18. used are haze and/or exposure, modulation transfer function, granularity, scale factor and scene content. There probably will be between 1000-1500 Gems in a set. It is anticipated that this technique, if successful, could be developed into a semi-automated image evaluation procedure.

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